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Ravi

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(54) **HYDROGEL NANOCOMPOSITES FOR OPHTHALMIC APPLICATIONS**

(58) **Field of Classification Search** None
See application file for complete search history.

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(57) **ABSTRACT**

The present invention relates to reversible hydrogel systems. Particularly, the hydrogel of the present invention is made up of copolymers that can be a hydrogel when in an oxidize state and can be a solution when in a reduced state. A solution of the copolymer can be oxidized to form a hydrogel; and the hydrogel can be reduced to form a solution of the copolymer. Reversible nanogels can also be formed from a dilute solution of the copolymers. The hydrogel is formed with nanoparticles embedded therein to form a nanocomposite whose refractive index and modulus can be controlled by varying the amounts of nanoparticles and the polymer concentration of the hydrogel, respectively.

Related U.S. Application Data

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(51) **Int. Cl.**
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(52) **U.S. Cl.** **424/489; 977/773**

16 Claims, 12 Drawing Sheets

